Koefisien Perpindahan Panas Ke Permukaan Bola Kuningan dalam Tungku Unggun Terfluidakan

Siswanti

Abstract

Fluidized Bed Combustion (FBC) is well known in the coal combustion processes. In order to observe the combustion process, knowledge abaou heat transfer coefficient is needed. In the determination of the bed-coal particle heat transfer coefficient in FBC, the coal represented by a brass sphere which was immersed in the hot bed. The experiments were conducted using a steel fluidization column, 26,5 mm in diameter and heated externally by an electrical furnace. The bed was filled with 362 μm *diameter quartz sand particles, 110 mm static height and fluidized with air, fluidization velocity was in 1.1 from minimum-fluidization velocity. The method of experimental was unsteady, by measuring the center of brass sphere temperature variation during its heating up in the bed (time temperature-history). Variation temperature of 1,475 cm, 1,815 cm and 1.915 cm diameter brass test sphere was measured using a k type thermocouple (chromel-alumel) embedded in center of brass sphere and releated with recorder. The experimental result on range temperature of bed 300 – 500* ^{o}C*, resulted value of heat transfer coefficient was 573,4 – 761,9* $W/m^2.K$ *and shows that increasing bed temperature will increases the value of heat transfer coefficient.*